

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) High-repetition mode-coupled ultra-short pulse laser system for generating femto- or picosecond pulses, according to the principle of pulse decoupling, comprising at least

- an amplifying laser medium-(11, 11')
- a laser resonator with at least one resonator mirror (6a-d, 7a-g, 8a-i, 16, 14, 14') and at least one pulse decoupling component-(1, 1'),
- a saturable absorber mirror (14, 14') and
- a pump source-(9, 9'), in particular a laser diode source, for pumping the laser medium-(11, 11'),

characterized in that wherein the pulse decoupling component (1, 1') is an electro-optical modulator.

2. (Currently Amended) Ultra-short pulse laser system according to Claim 1, characterized in that wherein the electro-optical modulator is a BBO cell.

3. (Currently Amended) Ultra-short pulse laser system according to Claim 1, characterized in that wherein the electro-optical modulator is an RTP cell, in particular having a component for compensating a thermal drift.

4. (Currently Amended) Ultra-short pulse laser system according to Claim 1, characterized by further comprising at least one dispersive mirror (6a-d, 7a-g, 8a-i) for dispersion compensation, in particular a Gires-Tournois interferometer.

5. (Currently Amended) Ultra-short pulse laser system according to Claim 4, characterized in that wherein the laser system is formed so that, in the generation of picosecond pulses, the nonlinear phase is less than 100 mrad, in particular less than 10 mrad, the nonlinear phase being calculated per resonator cycle and per 1% modulation depth of the saturable absorber mirror.

6. (Currently Amended) Ultra-short pulse laser system according to Claim 1, ~~characterized in that~~ wherein the laser system is formed so that, in the generation of femtosecond pulses, the r parameter is less than 1, ~~in particular less than 0.25.~~

7. (Currently Amended) Ultra-short pulse laser system according to Claim 1 ~~characterized in that~~ wherein the laser medium (11, 11') is ytterbium-doped glass or Nd:YVO₄.

8. (Currently Amended) Ultra-short pulse laser system according to Claim 1, ~~characterized in that~~ wherein the laser medium (11, 11') comprises ytterbium-doped tungstates, ~~in particular Yb:KGW or Yb:KYW.~~

9. (Currently Amended) Ultra-short pulse laser system according to Claim 1, ~~characterized in that~~ wherein the laser medium has a disc-like geometry.

10. (Currently Amended) Ultra-short pulse laser system according to Claim 1, ~~characterized in that~~ wherein the pump source is formed and is arranged in such a way that a pump light spot having a ratio of length to width of at least 2:1 is formed, the pump light spot consisting of a single ray or the combination of a plurality of rays, ~~the rays preferably being generated by laser diodes.~~

11. (Canceled)

12. (New) An Ultra-short pulse laser system according to Claim 1, wherein the pump source is a laser diode source.

13. (New) An Ultra-short pulse laser system according to Claim 3, wherein the RTP cell comprises a component for compensating a thermal drift.

14. (New) An Ultra-short pulse laser system according to Claim 4, wherein the at least one dispersive mirror for dispersion compensation is a Gires-Tournois interferometer.

15. (New) An Ultra-short pulse laser system according to Claim 5, wherein the nonlinear phase is less than 10 mrad.
16. (New) An Ultra-short pulse laser system according to Claim 6, wherein the r parameter is less than 0.25.
17. (New) An Ultra-short pulse laser system according to Claim 8, wherein the laser medium comprises Yb:KGW or Yb:KYW.
18. (New) An Ultra-short pulse laser system according to Claim 10, wherein the pump light spot consists of the combination of a plurality of rays, the rays being generated by laser diodes.
19. (New) A method of processing a material, comprising:
 - providing a material to be processed by plasma generation, and
 - processing the material using the high-repetition mode-coupled ultra-short pulse laser system according to Claim 1.